

by linking an amino alkyl spacer and a cap comprising an aromatic hydrocarbon ring with an amine member, to a solid phase through a urea linkage.

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Figure 3 illustrates a method of making a bimodal pH dependent ion exchange matrix. --

On page 11, line 12, please delete "Figure 1" and insert therefor -- Figure 4 --.

On page 23, please delete the period (".") at the end of line 7, and the "It" at the beginning of line 8.

On page 39, line 19, after "C3", please insert 1 [SEQ ID NO:1] --.

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On page 39, line 19, after "CTT 3", please insert 2 [SEQ ID NO:2] --.

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On page 41, line 12, please delete "Figure 1" and replace with -- Figure 4 --.

On page 41, line 25, please delete "Figure 1" and replace with -- Figure 4 --.

On page 19, line 23, please delete "concurrently filed".

On page 19, line 24, please delete "_____" and replace with

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-- 09/312,139, filed May 14, 1999 --.

NE

Please add the Sequence Listing referred to in the Statement Under 37 C.F.R.1.821(e), transmitted herewith, (i.e., the Sequence Listing filed in prosecution of U.S. Application No. 09/312,172) to the Specification.

II. IN THE CLAIMS

Please amend the claims, as follows:

1. (Amended) A pH dependent ion exchange matrix, comprising:
 - a solid support, and
 - a plurality of [first] ion exchange ligands, each first ion exchange ligand comprising:

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a cap comprising an amine with a pK of less than about 9;

a spacer covalently attached to the cap, the spacer comprising a spacer alkyl chain with an amine terminus and an acidic moiety covalently attached to the spacer alkyl chain, wherein the acidic moiety is a carboxyl residue; and

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a linker comprising a linker alkyl chain covalently attached to the solid support at a first end of the linker alkyl chain and covalently attached to the amine terminus of the spacer at a second end of the linker alkyl chain; wherein the matrix has a capacity to adsorb to a target nucleic acid at a first pH, and to release the target nucleic acid at a desorption pH which is higher than the first pH.

86. (Amended) A method of making a pH dependent ion exchange matrix, comprising the steps of:

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(a) providing a solid support;

(b) providing a first ion exchange ligand precursor comprising:

a cap comprising an amine with a pK of less than 9, wherein the amine is selected from the group consisting of a primary, a secondary, or a tertiary amine;

a spacer covalently attached to the cap, the spacer comprising a spacer alkyl chain and with an amine terminus, an acidic substituent which is covalently attached to the spacer alkyl chain, wherein the acidic substituent is a carboxyl residue protected by a first protecting group; and

a linker comprising a linker alkyl chain having a first end and a second end, wherein the second end is covalently attached to the amine terminus of the spacer;

(c) combining the solid phase and the [first] ion exchange ligand precursor under conditions where a covalent bond is formed between solid phase and the first end of the linker alkyl chain; and

(d) removing the first protecting group from the carboxyl residue, thereby forming a first ion exchange ligand.

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88. (Amended) The method of claim 87, wherein the [acidic substituent] first protecting group is[of the first ion exchange ligand is a carboxyl residue protected by] a methyl group[, wherein the methyl group is removed from the carboxyl residue after step (c)].

89. (Amended) The method of claim 86, wherein the method further comprises a step of covalently attaching a second ion exchange ligand precurs[e]or to the solid